

## CLAIMS:

1. A catheter assembly comprising:
  - a substantially hollow proximal tubular member, at least a portion of the proximal tubular member having a coating of at least one thermoplastic polymer thereabout, the proximal tubular member having an end region;
  - a substantially distal outer tubular member, the distal outer tubular member having an end region, a first portion of the end region of the distal outer tubular member being engaged to a first portion of the end region of the proximal tubular member to define a first engagement region, the proximal tubular member and the distal outer tubular member defining at least one continuous central lumen therethrough; and
  - a substantially hollow inner tubular member, at least a portion of the distal outer tubular member disposed about at least a portion of the inner tubular member, a first portion of the inner tubular member engaged to a second portion of the end region of the proximal tubular member to define a second engagement region, a second portion of the inner tubular member engaged to a second portion of the end region of the distal outer member to define a third engagement region, the end region of the proximal tubular member extending distally into the distal outer tubular member adjacent to the at least a portion of the inner tubular member.
2. The catheter assembly of claim 1 wherein the catheter assembly is a balloon catheter.
3. The catheter assembly of claim 1 wherein the catheter assembly is a monorail catheter or a rapid-exchange catheter.
4. The catheter assembly of claim 1 wherein the proximal tubular member is at least partially constructed from metal.
5. The catheter assembly of claim 1 wherein the coating is selected from at least one member of the group consisting of: nylon, polyester elastomer, polyether/block polyamide, polyamide, fluoro-polymer, PEEK, PE, polyurethane, POC, PTFE and any combination thereof.
6. The catheter of claim 1 wherein the proximal tubular member is a hypotube.
7. The catheter of claim 1 wherein the distal outer tubular member is at least partially constructed from at least one polymeric material.
8. The catheter of claim 1 wherein the distal outer tubular member is at least

partially constructed from at least one member of the group consisting of: nylon, polyester elastomer, polyether/block polyamide, polyamide, fluoro-polymer, PEEK, PE, polyurethane, POC, PTFE and any combination thereof.

9. The catheter assembly of claim 1 wherein the first engagement region comprises  
5 the first portion of the end region of the distal outer tubular member radially overlapping the first portion of the end region of the proximal tubular member.

10. The catheter assembly of claim 9 wherein a first portion of the coating and the first portion of the end region of the distal outer tubular member are bonded together.

11. The catheter assembly of claim 9 wherein a first portion of the coating and the  
10 first portion of the end region of the distal outer tubular member are welded together in a butt-weld configuration.

12. The catheter assembly of claim 9 wherein a first portion of the coating and the first portion of the end region of the distal outer tubular member are fused together in a continuous layer.

13. The catheter assembly of claim 1 wherein the inner member defines a guide wire  
15 lumen.

14. The catheter assembly of claim 1 wherein the inner member is at least partially constructed from at least one member of the group consisting of: nylon, polyester elastomer, polyether/block polyamide, polyamide, fluoro-polymer, PEEK, PE,  
20 polyurethane, POC, PTFE and any combination thereof.

15. The catheter assembly of claim 1 wherein the proximal tubular member has a substantially elliptical cross-sectional shape.

16. A method for assembling a catheter comprising the steps of:

- providing a substantially hollow proximal tubular member, the proximal  
25 tubular member defining an interior surface and an exterior surface, at least a portion of the exterior surface being coated with at least one thermoplastic polymer, the proximal tubular member having an end region;

- providing a substantially hollow distal outer tubular member, the distal  
outer tubular member defining an interior surface and an exterior surface and having an  
30 end region;

- providing a substantially hollow inner tubular member, the inner tubular member defining a guide wire lumen;

- disposing at least a portion of the distal outer tubular member about at least a portion of the inner tubular member;
- positioning at least a portion of the end region of the distal outer tubular member adjacent to at least a portion of the end region of the proximal tubular member to define a first engagement region, the proximal tubular member and the distal outer tubular member defining at least one continuous central lumen that extends therethrough;
- bonding at least a portion of the at least one thermoplastic polymer to the at least a portion of the end region of the distal outer tubular member;
- bonding at least a portion of the at least one thermoplastic polymer to a portion of the inner tubular member; and
- engaging at least a portion of the end region of the distal outer tubular member to a portion of the inner tubular member.